

CLAIM AMENDMENTS

IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1-37. (Canceled)

38. (New) A device for controlling processing of data elements, wherein threads are assigned to data elements and no more than one data element enters the device at one time, comprising:

- a first unit operable for storing contexts associated with corresponding threads, wherein the first unit is configured to fetch a first unit instruction and store the first unit instruction in a context associated with a thread assigned to an incoming data element, wherein the context contains context information indicative of a present state of the thread;
- a second unit configured to fetch a second unit instruction, which succeeds a stipulated instruction in a sequence of instructions of a stipulated thread; and
- a third unit, configured to decode a selected instruction selected from the group consisting of the first unit instruction and the second unit instruction and generate a control signal for processing of the data element.

39. (New) The device according to Claim 38, wherein

- the second unit instruction succeeds the stipulated instruction by one instruction.

40. (New) The device according to Claim 39, wherein

- the second unit is configured to receive an increment of a count value and an identification value, which designates a thread, and
- the second unit is configured to use the increment of the count value and the identification value to determine the second unit instruction.

41. (New) The device according to Claim 38, wherein

- the first unit is configured to activate a new context that is associated with the thread assigned to the incoming data element if a preceding data element is assigned to another thread.

42. (New) The device according to Claim 41, wherein

- the first unit is configured to fetch, responsive to activating the new context, a first instruction of the incoming data element thread and transmit the first instruction to the third unit for decoding; and
- the first unit is configured to transmit an increment of the position that the instruction fetched by it assumes in the thread, to the second unit.

43. (New) The device according to Claim 40, wherein

- the second unit is configured to determine the instruction that succeeds the instruction fetched by the first unit in the thread.

44. (New) The device according to Claim 38, wherein

- the selected instruction is repeated for successive data elements until a stipulated condition is fulfilled.

45. (New) The device according to Claim 44, wherein

- the third unit is configured to cause repetition of the selected instruction by causing repetition of a control signal.

46. (New) The device according to Claim 48, wherein

- the number of repetitions of the selected instruction is stipulated by a value;
- the third unit is configured to decrement the value in conjunction with each repetition; and
- the repetitions are interrupted when the value reaches zero.

47. (New) The device according to Claim 44, wherein

- responsive to fulfillment of the stipulated condition, a stipulated instruction within a currently assigned thread is used for processing of a succeeding data element entering the device next if a thread assigned to the succeeding data element is the same as the currently assigned thread.

48. (New) The device according to Claim 47, wherein

- the third unit is configured to determine the fulfillment of the stipulated condition.

49. (New) The device according to Claim 47, wherein

- the stipulated instruction is the second unit instruction fetched by the second unit.

50. (New) The device according to Claim 49, further comprising:

- a connection between the second unit and the third unit, via which the second unit instruction is transmitted to the third unit.

51. (New) The device according to Claim 49, wherein

- the second unit instruction fetched is transmitted to the first unit and entered in a context therein.

52. (New) The device according to Claim 47, wherein

- the stipulated instruction is fetched by the first unit and transmitted to the third unit for decoding.

53. (New) The device according to Claim 47, wherein

- the third unit, after fulfillment of the stipulated condition, transmits an instruction to the first unit indicative of which instruction is to be fetched.

54. (New) The device according to Claim 47, wherein

- the stipulated condition comprises a condition selected from the group consisting of assertion of a signal controllable from outside of device, detection of a specific data element entering the device, detection of a specific state of the currently assigned thread, and detection of a specific instruction to be processed.

55. (New) The device according to Claim 44, further comprising:

- a program memory including instructions for processing of the data elements and information corresponding to at least one instruction indicative of to how many data elements the instruction is to be applied.

56. (New) The device according to Claim 38, further comprising:

- two series-connected delay units each configured to delay the data element by one clock cycle.

57. (New) A method for controlling processing of data elements, comprising:

- assigning a thread to an incoming data element;
- fetching by a first unit a first unit instruction that is stored in a context associated with the assigned thread assigned;
- fetching by a second unit a second unit instruction, which succeeds a stipulated instruction in a stipulated thread, and
- decoding by a third unit a selected instruction selected from a group consisting of the first unit instruction and the second unit instruction and generating a control signal for processing of the incoming data element.

58. (New) The method according to Claim 57, wherein

- the second unit instruction immediately succeeds the stipulated instruction.

59. (New) The method according to Claim 58, further comprising:

- receiving, by the second unit, an increment of a count value and an identification value, which designates a thread, and
- determining, by the second unit, the second unit instruction using the increment of the count value and the identification value

60. (New) The method according to Claim 57, further comprising:

- activating, by the first unit, a context of the assigned thread if a preceding data element refers to another thread.

61. (New) The method according to Claim 60, further comprising:

- responsive to activating the context, by the first unit, fetching a first instruction of a thread associated with the activated context as the first unit instruction and transmitting the first unit instruction to the third unit for decoding; and
- transmitting an increment of a position the first unit instruction assumes in the thread to the second unit.

62. (New) The method according to Claim 59, further comprising:

- determining an instruction that succeeds the instruction fetched by the first unit in the thread.

63. (New) The method according to Claim 57, further comprising:

- decoding an instruction repetitively for successive data elements until a stipulated condition is met.

64. (New) The method according to Claim 63, wherein

- repetitively decoding the instruction is accomplished by the fetching the same control signal by the third unit.

65. (New) The method according to Claim 63, wherein
- the number of repetitions of an instruction is stipulated by a value,
 - the value, during a repetition of the instruction, is decremented by the third unit, and
 - the repetitions are interrupted by the value 0.
66. (New) The method according to Claim 63, wherein
- after fulfillment of the stipulated condition a stipulated instruction within a currently assigned thread is used for a successive data element if the currently assigned thread is also assigned to the successive data element.
67. (New) The method according to Claim 66, wherein
- an inquiry into fulfillment of the stipulated condition occurs in the third unit.
68. (New) The method according to Claim 66, wherein
- the stipulated instruction is the second unit instruction.
69. (New) The method according to Claim 67, wherein
- the second unit instruction is transmitted to the first unit and stored in a context of the first unit.
70. (New) The method according to Claim 66, wherein
- the stipulated instruction is fetched by the first unit and transmitted to the third unit for decoding.
71. (New) The method according to Claim 67, further comprising:
- after fulfillment of the stipulated condition, transmitting an instruction by the third unit to the first unit as to which instruction is to be fetched.

72. (New) The method according to Claim 66, wherein

- the stipulated condition, whose fulfillment leads to interruption of repetitions of an instruction, is fulfilled by a signal controllable from outside of device, or by a specific data element entering the device, or by a specific state of the corresponding thread, or by a specific instruction to be processed.

73. (New) A device for controlling processing of data elements, comprising:

- a first unit operable to store context information associated with a thread to which an incoming data element is assigned and further operable to fetch a first unit instruction wherein the first unit instruction is an instruction of the thread;
- a second unit operable to fetch a second unit instruction wherein the second unit instruction; and
- a third unit operable to decode instructions and further operable to generate a selection control signal wherein the selection control signal is used to select between the first unit instruction and the second unit instruction as an instruction next to be provided to and decoded by the third unit.

74. (New) The device of claim 73, wherein the second unit instruction is an instruction in the thread that is a sequentially adjacent instruction succeeding the first unit instruction.